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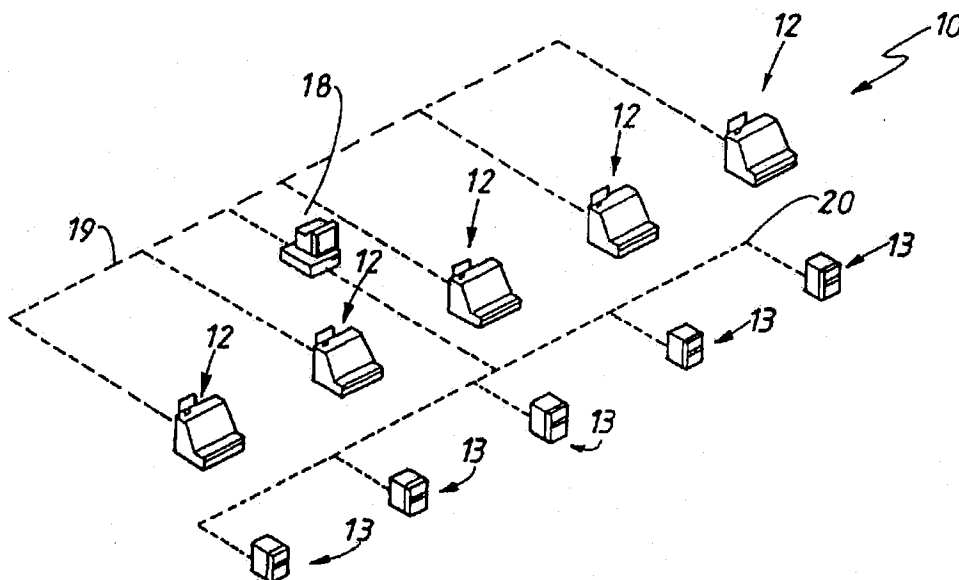
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(54) Title: DISPENSING APPARATUS



(57) Abstract

Dispensing apparatus (10) is provided for dispensing lottery tickets (73) by the checkout operator at a retail outlet. The dispenser assembly (13) containing the tickets (73) is controlled by a central processing unit (18), connected to the cash registers (12), which records the dispensing of tickets (73) from said dispenser assembly (13). The dispenser assemblies (13) are removable for relocation to a service station at which the central processing unit (18) may be operated in a secure manner for loading and unloading the relocated dispenser with tickets to be dispensed or for repair, checking or servicing.

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"DISPENSING APPARATUS"

This invention relates to dispensing apparatus.

This invention has particular application to dispensing apparatus for dispensing lottery tickets or the like and for 5 the purposes of illustration, reference will be made hereinafter to such application. However, the dispensing apparatus of the present invention could be used for dispensing other articles such as place tickets or coupons or articles such as drugs, sweets or the like, and particularly 10 where the dispensing of the article is to be under strict control.

Lottery tickets are a popular form of gambling, particularly in the form of so-called "instant lottery" tickets where a ticket which is purchased includes a prize 15 portion which is printed under a temporary covering to be removed by the purchaser, usually by scraping away the temporary covering.

Such tickets are sold through many general retail outlets such as newsagents, stalls, convenience stores and 20 supermarkets and there is little control over the dispensing of the tickets. As a result the incidence of theft of such tickets has increased considerably. The theft may be by a member of the public or an employee of the retail outlet. This obviously results in a revenue loss to the retailers of 25 the lottery tickets and/or the lottery organizers.

Dispensing of lottery tickets, unlike edible consumables for example, can invoke emotions in purchasers who may not tolerate substitution of a dispensed ticket in lieu of the ticket selected, such as may be caused by a malfunction in a 30 ticket dispenser. Furthermore dispensing of instant lottery tickets demands prepayment and ticket sale supervision in order to ensure appropriate dispensing to avoid sale to underage persons or tampering with unpurchased tickets.

The present invention aims to alleviate at least one of

the above disadvantages and to provide dispensing apparatus which will reduce the incidence of theft of dispensed articles such as tickets, coupons or the like to be dispensed.

5 With the foregoing in view, this invention in one aspect resides broadly in dispensing apparatus including:-

a dispenser assembly containing articles to be dispensed;

control means for controlling the dispensing of said
10 articles by said dispenser assembly whereby during normal operation articles can be dispensed from said dispensing means only by operation of said control means, and

monitoring means for monitoring and recording the dispensing of articles from said dispenser assembly.

15 In a preferred embodiment of this invention, the control means includes an item key or button associated with a cash register whereby the item key may be actuated to dispense an article and to record the cost of the dispensing transaction with a total purchase rung up on the cash register. The item
20 key or button may be further associated with keypad which may be used to enter the number of articles to be dispensed.

Preferably the monitoring means logs each dispensing operation and includes a memory providing a searchable audit trail enabling the sale of tickets to be selectively
25 accounted for. The monitoring means may automatically attribute a time of sale to each logged dispensing operation or it may be operator sensitive, requiring an operator password or key to be entered for actuation of the dispensing apparatus.

30 The monitoring means and control means may include communication means operatively connecting each of a plurality of dispenser assemblies to a central processing or supervising unit for monitoring and recording the dispensing of articles from each of the dispenser assemblies.

35 Alternatively the or each dispenser assembly may include

its own memory means and be provided with a communication port or ports through which it may be interrogated or through which its relevant information may be downloaded to a central processing or supervising unit for monitoring and recording
5 the dispensing of articles from the or any such dispenser assembly.

The dispenser assembly may be a stand-alone machine or it may comprise one of a plurality of operator controlled dispenser assemblies each disposed, for example, adjacent a
10 respective cash register at a supermarket checkout station. The communication means may include cable means providing electronic communications between respective dispenser assemblies and the central processing or supervising unit.

The central processing or supervising unit may also be
15 in communication with the cash registers by suitable communication means such as cables to monitor operation of each cash register and control operation of the respective dispenser assembly. The supervising unit may serve to actuate a selected dispenser assembly on actuation of an
20 associated cash register, actuation of the cash register being sensed by the supervising unit and causing actuation of the corresponding dispenser assembly.

It is preferred that the interface between the central processing or supervising unit and each cash register be such
25 that any cash sale keyed into the cash register in respect of an instant lottery is not registered as a sale and does not appear on the register printout or a display which tallies sales made to a customer until a ticket dispensed acknowledgement is received from the ticket dispenser
30 assembly. This ensures that money is not taken from a customer for purchase of a ticket until a dispensed ticket is available for supply to the customer.

For this purpose, the or each the cash register may be provided with a dedicated key or keys which when operated
35 will cause actuation of the dispenser assembly for dispensing

articles. The key or keys alternatively may comprise touch pads or touch sensitive regions of a VDU and/or a bar code reader for reading a bar code provided on each dispensed ticket. The cash register may further be provided with a
5 multiple or times key or touch pad to enable multiple dispensing of tickets. For example one key may be a key which indicates the article to be dispensed e.g. L for lottery ticket and the multiple key may be pressed to indicate the number of articles to be dispensed e.g. X 4 for
10 four articles to be dispensed.

The central processing or supervising unit may be arranged to sense or be informed of the initial number of articles in each dispenser assembly, to identify the dispenser assembly associated with each register and to
15 monitor the number of articles being dispensed by the dispensing assemblies.

Each dispenser assembly is suitably in the form of a module which can be locked into an operative position in communication with the central processing or supervising
20 unit. This may be achieved by arranging a cradle assembly at each desired dispensing location hard wired to the central processing or supervising unit and having a plug-in connection with a dispenser assembly module.

Furthermore, each dispenser assembly may be provided
25 with an identifying means which is readable by the central processing or supervising unit when a dispenser assembly is placed within the cradle assembly so as to enable the central processing or supervising unit to identify the dispenser assembly and control its operation. For this purpose, the
30 cradle may include a contact which engages with the identifying means on the dispenser assembly. Alternatively, other forms of identifying means may be used for this purpose including non-contact identifying and communication means.

The central processing or supervising unit thus may
35 sense which dispenser assembly is located in a particular

cradle associated with a particular cash register. The central processing or supervising unit may record the number of articles in a particular dispenser assembly and also the dispensing of articles from each dispenser assembly so that
5 an accurate record can be maintained of articles being dispensed and remaining within a dispenser assembly. In addition, the central processing or supervising unit may maintain, through its connection to the registers, an accurate record of the amount of money which should have been
10 collected for the articles being dispensed.

The dispenser assembly may include a dispenser unit or module which may be securely preloaded with articles to be dispensed at a secure loading station, for example in the office of the manager of the store in which the dispensing
15 assemblies are provided. After loading of the dispenser units in this manner, the articles in the dispenser units are suitably inaccessible except to authorised personnel and may not be removed from the dispenser units except by dispensing in the manner described above or by removal at the
20 loading station or by the authorised personnel.

The cash registers and an associated dispenser assembly may be installed in checkouts as used in supermarkets, self-service stores or the like or alternatively a dispenser assembly may be associated with a single cash register as
25 used in small retail outlets or the like. In a checkout or the like, the dispenser assembly may be provided at a secure location for example beneath the checkout counter and an outlet may be provided through which articles from the dispenser assembly may be dispensed. Such an outlet may be
30 in the form of a slot provided at the end of the checkout counter or in the top of the counter. Alternatively the dispenser assembly may be externally mounted and secured by an outer lockable cover.

Where a plurality of checkouts are provided in a store,
35 respective dispensing assemblies may be associated with each

checkout so as to be operable by the cash register associated with that checkout.

Indicating means may be provided for indicating the dispensing of articles from the checkout. Such means may
5 count up or count down the respective articles as they are dispensed. Such indicating means suitably comprises a visual display. Thus if four articles are required to be purchased at the register, the register operator will press the appropriate keys on the register which will be displayed on
10 the visual display, for example by the number four. As each article is dispensed by the dispenser assembly, the display will increment down so that a check is made of articles being dispensed. As an alternative, the display may count up as each article is dispensed. The display may be a separate
15 display or alternatively may be incorporated into the register.

In use and where a particular article held within the dispenser assembly is required to be purchased at the checkout, a check-out operator may operate the register to
20 indicate the sale of one or more of the articles, whereupon the control means through the supervising unit causes the dispenser assembly associated with that register to dispenses the selected number of articles. The number of articles purchased and dispensed are then recorded in conventional
25 manner on a register receipt which will also show the total amount payable.

In a further aspect, the present invention resides broadly in a method of dispensing articles from or adjacent a cash register, said method including:-

- 30 providing a dispenser assembly for holding a plurality of articles to be dispensed,
providing control means between said dispenser assembly and said cash register, and
operating said cash register to cause actuation of said
35 dispenser assembly through said control means for dispensing

articles from said dispensing apparatus.

A purchaser as well as purchasing articles such as lottery tickets from the dispenser assembly may also purchase other objects such as grocery lines at the same time. In 5 this instance, the total purchase price would be indicated to the purchaser on the receipt which shows the total amount payable. A breakdown is provided on the receipt showing the number of lottery tickets purchased and their cost. The total amount payable as is conventional is also displayed on 10 the cash register.

In order that this invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawing which illustrates a typical embodiment of the invention and wherein:-

- 15 FIG. 1 is a schematic illustrating a typical multi-station dispensing installation according to this invention;
- FIG. 2 illustrates a group of checkouts incorporating the dispensing installation of Fig. 1;
- 20 FIG. 3 is an enlarged view showing the Association of dispensers and cash registers of Fig. 1;
- FIG. 4 is a perspective view of a preferred form of dispenser module;
- FIG. 5 is a sectional view illustrating the locking 25 arrangement between the dispenser module and the cradle assembly;
- FIG. 6 is a perspective view of a stand alone machine according to a further embodiment of the invention;
- FIG. 7 is a top view of the apparatus illustrated in 30 Fig. 6;
- FIGS. 8 and 9 illustrate the loading of tickets into the dispenser module, and
- FIGS. 10 to 14 illustrate preferred functions of the central processing or supervising unit.
- 35 Referring initially to Figs. 1 to 3 it will be seen that

the dispenser apparatus 10 is adapted for installation into a plurality of checkout stations 11, such as at a supermarket. Each check-out station 11 includes a check-out cash register 12 as well as a dispenser assembly 13 which may be bench
5 mounted as illustrated in Fig 3 or concealed beneath the bench or counter 17 as illustrated in Fig. 2.

Each dispenser assembly 13 includes a dispenser unit 14, such as is illustrated in our co-pending International Patent Application No. PCT/AU96/00662 and an integral ticket holder
10 15 which includes a removable magazine 22 which locks into the dispenser unit 14. Tickets may be dispensed from each dispenser unit 14 through a dispenser aperture 16 which in can be arranged at the end of the counter 17 of a check-out station 11. The bench top mounted dispenser assemblies 13
15 may be mounted beside the cash register as illustrated in Fig. 3 at the alternate position 25 of Fig. 2.

A supervising CPU unit 18 is operatively connected by a communication cable 19 to each checkout register 12 and by a further communication cable 20 to each dispenser assembly 13.
20 Each ticket holder 15 may be loaded by a supervisor, preferably at a secure location, who is able to enter details of the loaded tickets, including their number, into data storage means of the supervising CPU unit 18.

The information stored may include identification of the
25 dispensing unit 14 and its associated register 12. Each dispenser unit 14 is interchangeable with the units 14 in any of the check-out stations 11 and for this purpose each dispensing unit 14 is supported by a cradle assembly 23 which is secured on each checkout counter 17 to receive any one of
30 a plurality of loaded dispensing units 14.

Referring particularly to Figs. 3 to 5 it will be seen that each dispenser assembly 13 includes a ticket dispensing unit 14 of the type illustrated in our co-pending International Patent Application No. PCT/AU96/00662 which has
35 stepper motors controlling the feed, folding and severing

functions and state or condition monitors for controlled remote operation and which are able to dispense single or multiple tickets from a fan fold stack of tickets mounted in a storage space at the rear of the ticket dispensing unit 14.

5 In this embodiment the ticket dispensing unit 14 has a pair of side walls 26 separated by a vertical transverse wall 27 which divides the ticket dispensing unit 14 from the ticket storage space between the side walls 26. An enclosure 29 extends about the ticket dispenser assembly 13 and locks
10 thereto through a key operated lock 30 which has a locking tongue 31 which may be moved by the key into or from engagement with a slot 32 formed in the upper portion of the transverse wall 27.

The enclosure 29 includes a transparent panel 33 through
15 which the next ticket to be dispensed may be viewed and a pivotable tray 35 into which the severed ticket falls. The tray 35 may be pivoted from its normal position, shown in dotted outline at 36, at which it covers the key operated base lock assembly 37 which has a tongue 38 adapted to pivot
20 down behind an upstanding abutment 39 on the base wall 40 of the supporting cradle assembly 23. Slotted side walls 41 are formed integrally with the base wall 40 and receive transverse pins 42 which extend outwardly from the opposite side walls 26 of the dispenser assembly 13 in slots 43.

25 The slots 43 include an upstanding entry portion and a rearwardly extending longitudinal portion in which the pins 42 are retained in the locked position. When the locks 30 and 37 are disengaged the cover can be removed from the cradle assembly 23 by freeing the pins 42 from the slots 43
30 whereafter the dispenser assembly 13 may be removed after the plug-in connection between complementary connection parts 45 and 46 supported on the cradle assembly 23 and the dispenser assembly 13 respectively, have been freed from one another.

The plug-in connection 45 on the cradle assembly is
35 connected by the cable 20 to the supervising CPU unit 18 and

thus when a respective dispenser assembly is located in the cradle assembly 23 and the connection made between the connections 45 and 46, it is also connected to the supervising CPU unit 18 for control of the stepper motors and state sensors therein whereby dispensing of tickets from the fan-fold stack in the space 28 may be instigated by signals from the unit 18. The dispensing action is initiated by operation of a designated item key such as a key pad or button mounted in the cash register 12.

10 The stand alone machine 60 illustrated in Fig. 6 includes a dispenser assembly 61 mounted on a wheeled frame assembly 62 whereby it may be readily wheeled to a suitable location for selling tickets. The dispenser assembly 61 is similar to that described in Figs. 3, 4 and 5 however its upper wall 59, in addition to containing the cover lock 63, contains a LED display 64, an ON/OFF switch 65, which is also suitably key operated, and a rocker switch 66 for dispensing individual tickets. A coin slot 58 for storage of coins is also provided.

20 A mechanical counter 67 is also mounted on the top wall 62 for maintaining a record of the total number of tickets dispensed. The top wall also includes a communications port 68 whereby the memory in the stand alone machine may be interrogated by a supervising CPU unit such as the unit 18 of the previously described embodiment as well as a battery port 25 69 for an external power supply.

Each dispenser assembly 13/61 has a memory facility associated with the control of the stepper motors and state sensors. Suitably this is in the form of a button-like solid state device in which the data is seeded with the unique serial number of the button and algorithms unique to each customer. This makes the button almost impossible to duplicate.

In the present application the button-like solid state device keeps all data on the button as part of a printed 35

circuit located inside the dispenser assembly 13.

The dispenser assembly 13 will not operate without the button-like solid state device and all data relevant to the dispenser is kept in its memory. This system ensures all
5 data relevant to that ticket series remains with the dispenser assembly 13 when power is removed or the dispenser is moved or disconnected from the supervising CPU unit 18.

When the dispenser 61 is empty, data is down loaded from the button for accounting purposes and the dispenser assembly
10 61 is refilled. The monitored number of the tickets remaining in any one of the dispenser assemblies 13 may be monitored through the supervising CPU unit 18 which may be programmed to provide an alarm when ticket supplies are low or finished. New information including price, counts, type,
15 etc are then set back into the memory of the button-like device as required.

Referring to Figs. 8 and 9 it will be seen that tickets to be dispensed are stored in a removable cartridge 70 located in the storage space 28 between the side walls 26.
20 The cartridge 70 is channel shaped and includes a removable guide roller 71 supported between the opposed flanges 72 of the cartridge 70. A stack of tickets 73 in fan-fold arrangement can be inserted into the cartridge 70 so that the leading tickets pass from an upper portion of the fan-fold
25 stack between the guide roller 71 and the base web 75.

The side flanges 72 are suitably cut away at their lower ends adjacent the flange 75 so that the latter may engage over a wall 76 for retaining it in an operative position. A closure door 77 with suitable latching means 78 is hinged to
30 the back of one side wall 26 for securing the stacked tickets within the space 28. The tickets are fed from the space 28 about lower guide rollers 80 and upwardly through feed rollers 81 where the uppermost ticket 82 is exposed and is folded outwardly by arm 83 for severing and dispensing as is
35 defined in our co-pending International Patent Application

No. PCT/AU96/00662.

The overall width of the channel shaped cartridge 70 is less than the overall width between the side walls 26 so that a coin storage compartment communicating with the coin slot 5 58 may be formed at one side and a battery storage compartment at the other. The plug 46 is also provided at the bottom of the coin compartment for engagement with the complementary plug portion when the dispenser assembly 13 is located in its cradle assembly 23.

10 From the above it will be seen that a dispenser assembly 13/61 may be provided as a module which contains a known number of tickets ready for dispensing and a memory providing identification and recordal of relevant dispensing transactions. This module may be maintained by a supervisor 15 and provided to operatives at a checkout or with a mobile stand alone machine as illustrated in Fig. 6 to enable that operator to dispense tickets and suitably instant lottery tickets. The information in the memory may be downloaded at any stage to provide an audit trail with a view to locating 20 any discrepancies between revenue and ticket throughput.

The software contained within the supervising CPU unit 18 records the information illustrated in the screen print of Fig. 10. As shown it provides information storage facilities for up to 25 lanes of a supermarket and in respect of the 25 dispenser assembly 13 at each lane, it maintains the following information:-

- the status of the lane being polled;
- the number of tickets that have been issued from that lane;
- 30 the number of tickets requested by that lane;
- the number of credits remaining;
- the number of tickets remaining in that lane;
- an error message wherein a number indicates an error has occurred;
- 35 a feed indication which indicates if there is a ticket

in or out of the vend position;
a clamp and cut indicator which indicates the position
of these the stepper motors for "home", "midway" or
"extended";
5 the travel speed the stepper motors as pre set in
maintenance mode, and
the name of the ticket game currently in that dispenser.

The other information on this screen is CURRENT DATE, CURRENT
TIME, MAINTENANCE TOGGLE, SHOW ERROR FORM, PRINT REPORT FOR
10 LANE BELOW and EXIT which is password protected.

The "Show error" screen is illustrated in Fig. 11 and
indicates if an error occurs and the error number which
indicates why the error occurred.

If the "maintenance toggle" is operated the maintenance
15 menu which is password protected is displayed. The
maintenance display is used in setting up the dispenser
assembly 13 or for maintenance and can only be retrieved when
the dispenser apparatus is in the supervised service station
which corresponds to lane "0" which is a nominated supervised
20 maintenance position and only maintenance personnel with the
appropriate password may access the "maintenance" mode. Thus
there can be no tampering of dispenser assemblies which are
in use by operation of the supervising CPU unit 18.

However when a dispenser assembly is in lane "0", the
25 screen of Fig. 12 will appear with the supervisor window
displayed in Fig. 12a, which displays the serial number of
the dispenser being interrogated, the number of remaining
tickets, the code number for the particular game installed
and buttons for ADD and REMOVE which enables the supervisor
30 to enter the number of new tickets being installed as well as
entering the number of unsold tickets being removed. A
password protected exit button is also displayed.

If the maintenance mode is selected by the

maintenance toggle, the screen print illustrated in Fig. 12 appears to assist servicing of the dispenser apparatus 10. This screen displays the same information for all the lanes as is displayed in Fig. 10 but in addition includes the
5 maintenance window illustrated in Fig. 12 with maintenance facilities for independently controlling the operation of a dispenser assembly 13.

This password protected screen is typically used in setting up the dispenser apparatus 10 or for correcting an
10 error which may occur in use. At any time, a report may be printed such as the reports set out on page 16 herewith.

Similar functions are also provided for the stand alone machine 60 such as is illustrated in the screen prints of Figs. 13 and 14. This machine 60 that can be readily wheeled
15 to different locations and requires no external power. However it maintains the features of the supermarket dispenser assembly 13. This dispenser 60 may be returned to a central station and an interface to be established through the coms port 68 which allows all the data collected in the
20 dispenser to be downloaded to a master computer for audit purposes.

As with the earlier described embodiment, this enables a serviceman or installer to independently operate the various stepper motors and state sensors or adjust their operation
25 for fine tuning the machine at installation or after service.

It is preferred that the dispenser units 13 are activated by a command from the supervising CPU unit 18 to dispense the appropriate number of tickets or other items once the selected quantity has been entered into the check-
30 out station 11 by the relevant operator and communicated to the supervising CPU unit 18. Thus the checkout operator may key in the number of tickets required by depression of an appropriate key of the register to cause, through the CPU unit 18, actuation of the associated dispenser assembly 13 to
35 effect the dispensing of one or more tickets.

The dispenser apparatus 10 may be arranged so that the items are dispensed once the operator enters the amount tendered or a code indicating that payment has been effected. The supervisor CPU unit 18 may signal the operator when
5 restocking is required by calculating the number of items sold compared to the number of items stocked in the ticket holder, or alternatively, may include out-of-stock detection means for cross checking the number of items sold against the number stocked. The CPU unit 18 also monitors through the
10 cables 19 the checkout registers 12.

Where retail outlets include automatic restocking and reordering of items sold, the dispensing apparatus of the present invention may be incorporated into the stock control system of the retail outlet, or may be installed as a
15 separate stand alone system.

Each transaction is recorded by the CPU unit 18 to enable monitoring of the number of tickets being dispensed and the funds which should have been received for those tickets. If a dispensing unit 14 is removed from its cradle,
20 the CPU unit 18 will sense that removal and record the number of tickets which should be in the ticket holder 15 of the unit 14.

A display device 21 is preferably provided on or adjacent each checkout register 12 or counter 17 to display
25 the number of ticket dispensed or required to be dispensed. Thus if the operator keys four tickets into the register, the display will read four and will count down to zero as respective articles are dispensed. Alternatively, the display device 21 may count up as each ticket is dispensed.

30 It will of course be realised that the above has been given only by way of illustrative example of the invention and that all such modifications and variations thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of the invention as is
35 defined in the appended claims.

lane	Serial Number	date	Time	Issued	Credits	Requested	Stock	Game Code
10	842493200	19970316	083721	1	0	1	8,689	123
6	842493200	19970316	121104	1	0	1	8,486	123
6	842493200	19970316	121123	1	0	1	8,485	123
6	842493200	19970316	121133	1	0	1	8,484	123
6	842493200	19970316	121153	1	0	1	8,483	123
6	842493200	19970316	121212	2	0	2	8,481	123
6	842493200	19970316	121239	3	0	3	8,478	123
6	842493200	19970316	121304	3	0	3	8,475	123
6	842493200	19970316	121329	3	0	3	8,472	123
6	842493200	19970316	121354	3	0	3	8,469	123
6	842493200	19970316	121419	3	0	3	8,466	123
6	842493200	19970316	121446	3	0	3	8,463	123
6	842493200	19970316	121514	3	0	3	8,460	123
6	842493200	19970316	121539	3	0	3	8,457	123
6	842493200	19970316	121605	3	0	3	8,454	123
6	842493200	19970316	121630	3	0	3	8,451	123
6	842493200	19970316	121655	3	0	3	8,448	123
6	842493200	19970316	121720	3	0	3	8,445	123
6	842493200	19970316	121747	3	0	3	8,442	123
6	842493200	19970316	121813	3	0	3	8,439	123
6	842493200	19970316	121840	3	0	3	8,436	123
6	842493200	19970316	121907	3	0	3	8,433	123
6	842493200	19970316	121916	1	0	1	8,432	123
6	842493200	19970316	121946	1	0	1	8,431	123
18	842493200	19970316	122315	2	0	2	8,429	123
18	842493200	19970316	122415	2	0	2	8,427	123
18	842493200	19970316	122435	2	0	2	8,425	123
18	842493200	19970316	122455	2	0	2	8,423	123
18	842493200	19970316	122515	2	0	2	8,421	123
18	842493200	19970316	122536	2	0	2	8,419	123
18	842493200	19970316	122556	2	0	2	8,417	123
18	842493200	19970316	122616	2	0	2	8,415	123
18	842493200	19970316	122634	2	0	2	8,413	123
18	842493200	19970316	122656	2	0	2	8,411	123
18	842493200	19970316	122715	2	0	2	8,409	123
18	842493200	19970316	122728	1	0	1	8,408	123
18	842493200	19970316	122748	1	0	1	8,407	123
18	842493200	19970316	122808	1	0	1	8,406	123
18	842493200	19970316	122829	1	0	1	8,405	123
18	842493200	19970316	122849	1	0	1	8,404	123
18	842493200	19970316	122909	1	0	1	8,403	123
18	842493200	19970316	122927	1	0	1	8,402	123
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18	842493200	19970316	123029	1	0	1	8,399	123
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18	842493200	19970316	123250	1	0	1	8,392	123
18	842493200	19970316	123309	1	0	1	8,391	123
18	842493200	19970316	123329	1	0	1	8,390	123
18	842493200	19970316	123350	1	0	1	8,389	123

THE CLAIMS DEFINING THIS INVENTION ARE AS FOLLOWS:-

1. Dispensing apparatus including:-
 a dispenser assembly containing articles to be
dispensed;
5 control means for controlling the dispensing of said
articles by said dispenser assembly whereby during normal
operation articles can be dispensed from said dispensing
means only by operation of said control means, and
 monitoring means for monitoring and recording the
10 dispensing of articles from said dispenser assembly.
2. Dispensing apparatus as claimed in claim 1, wherein said
control means includes an item key associated with a cash
register for dispensing the selected item.
3. Dispensing apparatus as claimed in claim 1 or claim 2,
15 wherein the monitoring means logs each dispensing operation
or transaction and includes a memory providing a searchable
audit trail enabling sales to be selectively accounted for.
4. Dispensing apparatus as claimed in claim any one of the
preceding claims, wherein the monitoring means and control
20 means include communication means operatively connecting each
of a plurality of said dispenser assemblies to a central
processing or supervising unit for monitoring and recording
the dispensing of articles from each of the dispenser
assemblies.
- 25 5. Dispensing apparatus as claimed in claim 4, wherein the
or each dispenser assembly is suitably in the form of a
dispensing module which can be releasably locked into an
operative position in communication with the central
processing or supervising unit.

6. Dispensing apparatus as claimed in claim 4 or claim 5,
wherein each dispenser assembly is provided with an
identifying means which may be read by the central processing
or supervising unit so as to enable the central processing or
5 supervising unit to identify the dispenser assembly.

7. Dispensing apparatus as claimed in claim 5 or claim 6,
and including a cradle assembly at each desired dispensing
location for securely supporting a dispensing module and
being hard wired to an associated cash register and the
10 central processing or supervising unit and having a plug-in
connection for the supported dispensing module.

8. Dispensing apparatus as claimed in claim 7, wherein each
cradle assembly is provided with an identification which is
recorder by the central processing or supervising unit.

15 9. Dispensing apparatus as claimed in claim 7 or claim 8,
wherein the interface between the central processing or
supervising unit and each cash register is such that any cash
sale keyed into the cash register in respect of an article to
be dispensed is not registered in the cash register as a sale
20 and does not appear on the register printout or on a display
which tallies sales made to a customer until acknowledgement
is received from the dispenser assembly that the article has
been dispensed.

10. Dispensing apparatus as claimed in claim any one of the
25 preceding claims, wherein the dispenser assembly is a
dispenser module which may be securely preloaded with lottery
tickets to be dispensed and wherein the number of tickets
and/or their identification may be entered into the central
processing or supervising unit with the identification of the
30 particular dispenser module whereby the number and/or
identification of articles being dispensed may be recorded

against the relevant dispenser module.

11. Dispensing apparatus as claimed in claim any one of claims 7 to 10, and including a plurality of checkout stations in public areas each checkout station having a cash register and a cradle assembly and wherein each dispenser module is securely lockable to its supporting cradle assembly and said central processing or supervising unit is maintained in a private area.

12. Dispensing apparatus as claimed in claim any one of the preceding claims and including a plurality of cash registers associated with respective checkout lanes and a removable dispenser assembly associated with each cash register and a service station to which a dispenser assembly may be relocated for servicing, and wherein said control means includes a central processing unit which selectively interfaces with the controls of the dispenser assemblies including the dispenser assembly in the service station, said central processing unit having functions, which are separately password protected and which may be activated for a dispenser in the service station, including a function for loading and unloading the dispenser with articles to be dispensed and a function for repair, checking and servicing the operation of the dispenser assembly in the service station.

25

13. A method of dispensing articles from or adjacent a cash register, said method including:-

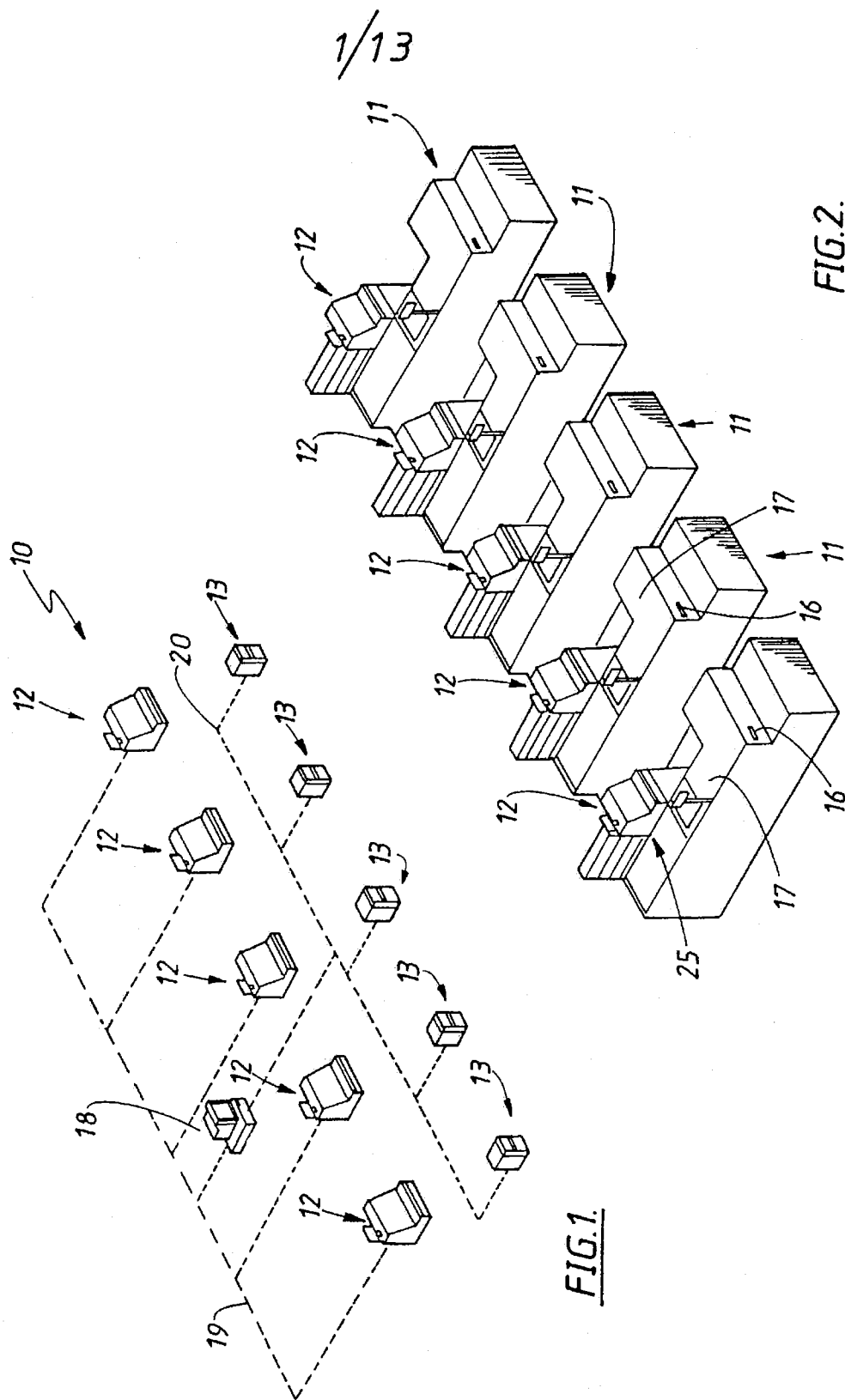
providing a dispenser assembly for holding a plurality of articles to be dispensed,

30 providing control means between said dispenser assembly and said cash register, and

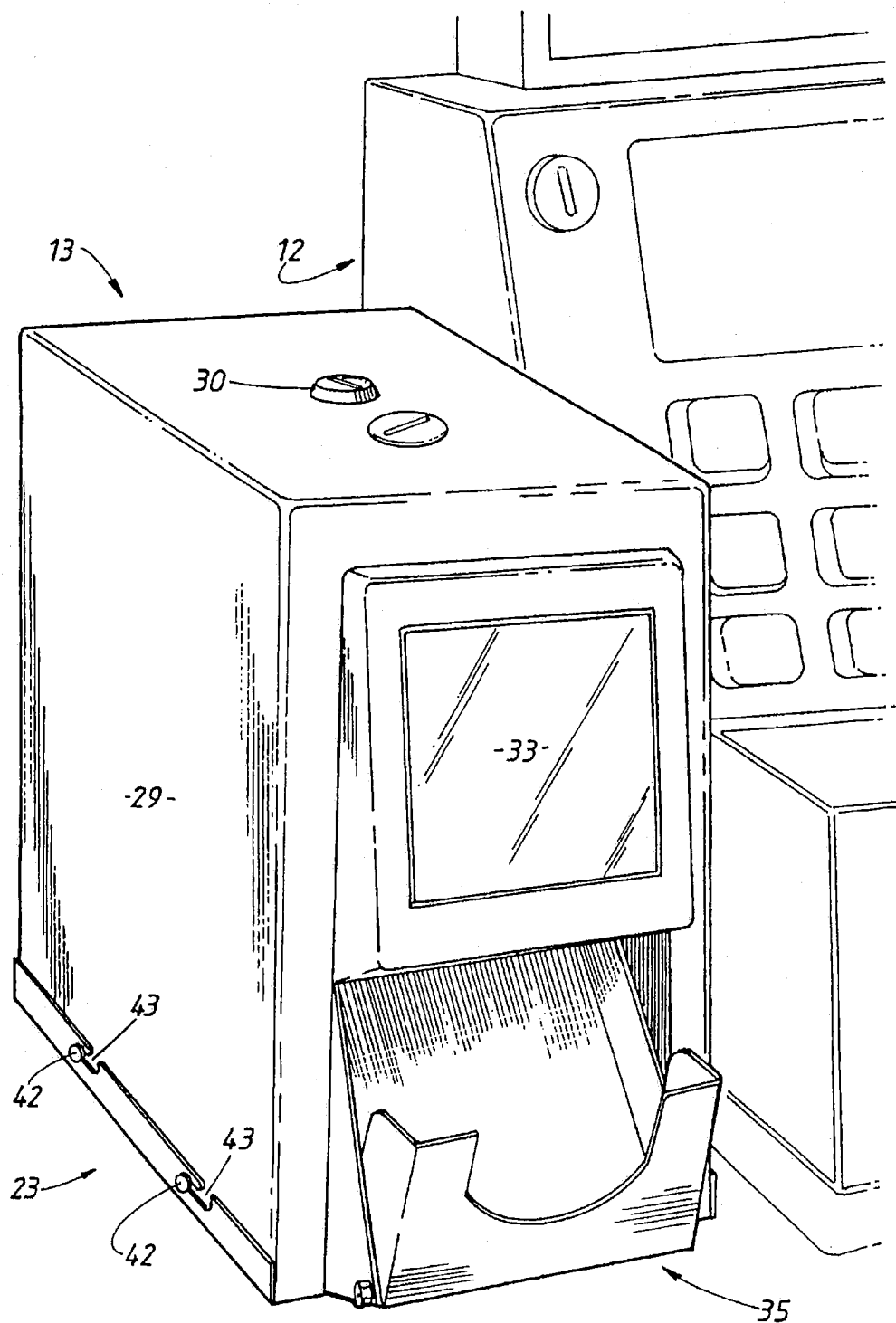
operating said cash register to cause actuation of said dispenser assembly through said control means for dispensing

articles from said dispenser assembly.

14. A method as claimed in claim 13 when the dispenser assembly is one of a plurality of dispenser assemblies in dispensing apparatus as claimed in claim 12, the method
- 5 including:-
- operating the cash registers to cause operator controlled dispensing of articles adjacent the respective cash registers;
 - removing and replacing any dispenser assembly from its
 - 10 operating position adjacent a cash register when the dispenser assembly requires reloading or maintenance;
 - relocating the removed dispenser assembly to the service station, and as required,
 - allowing the authorised personnel possessing the
 - 15 appropriate password to reload or service the dispenser assembly in the service station.



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FIG. 3.

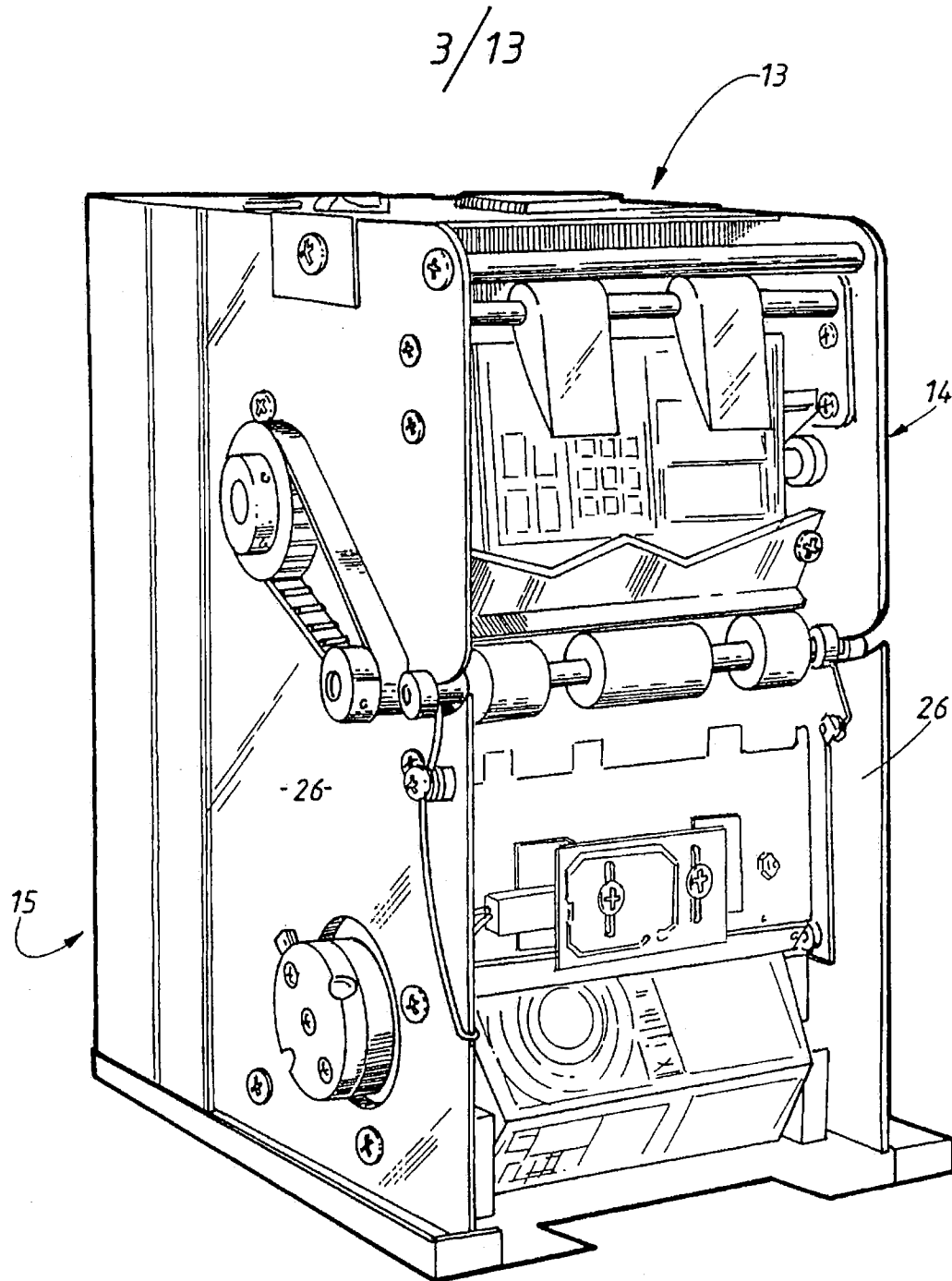
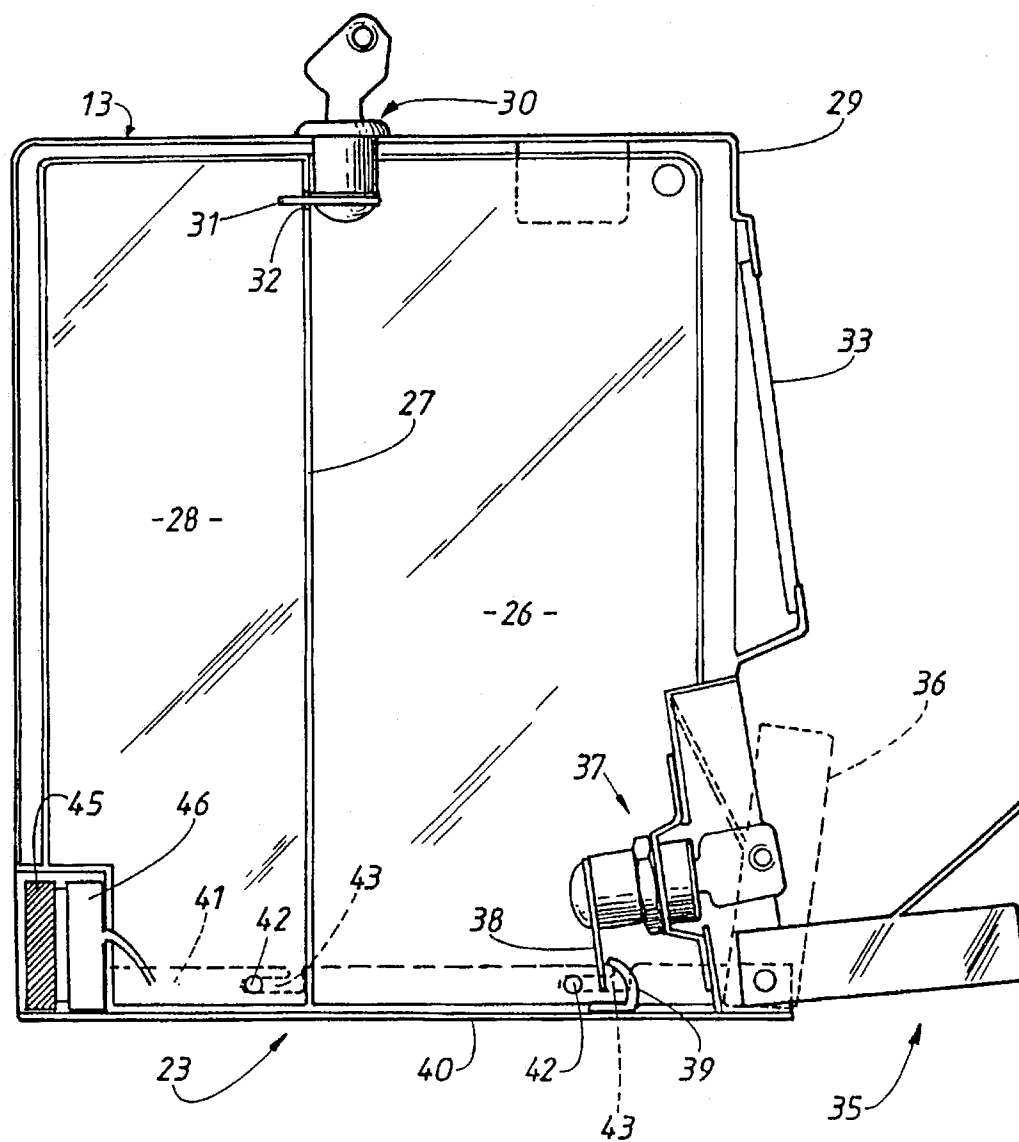
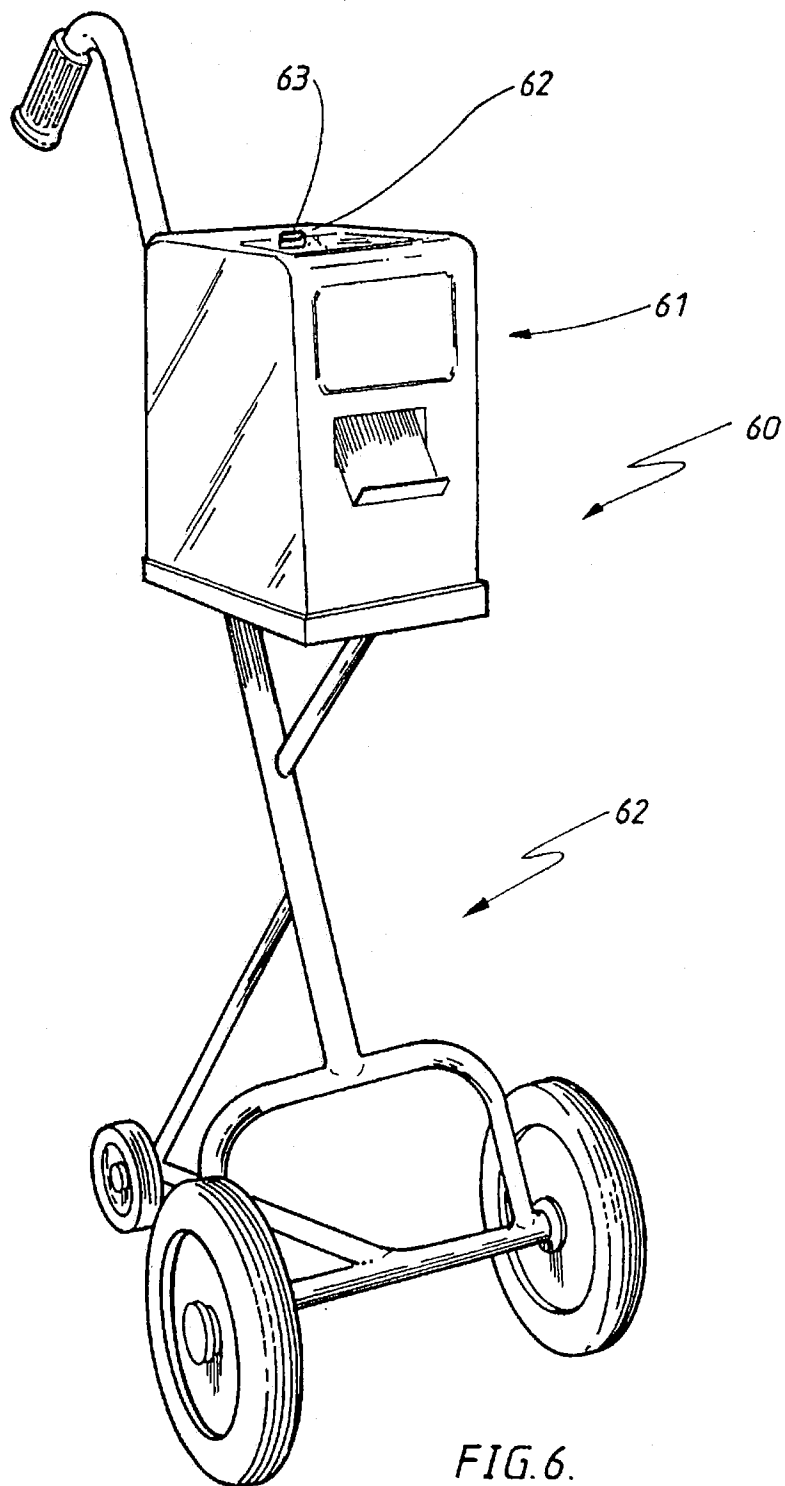


FIG. 4.

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FIG. 5.

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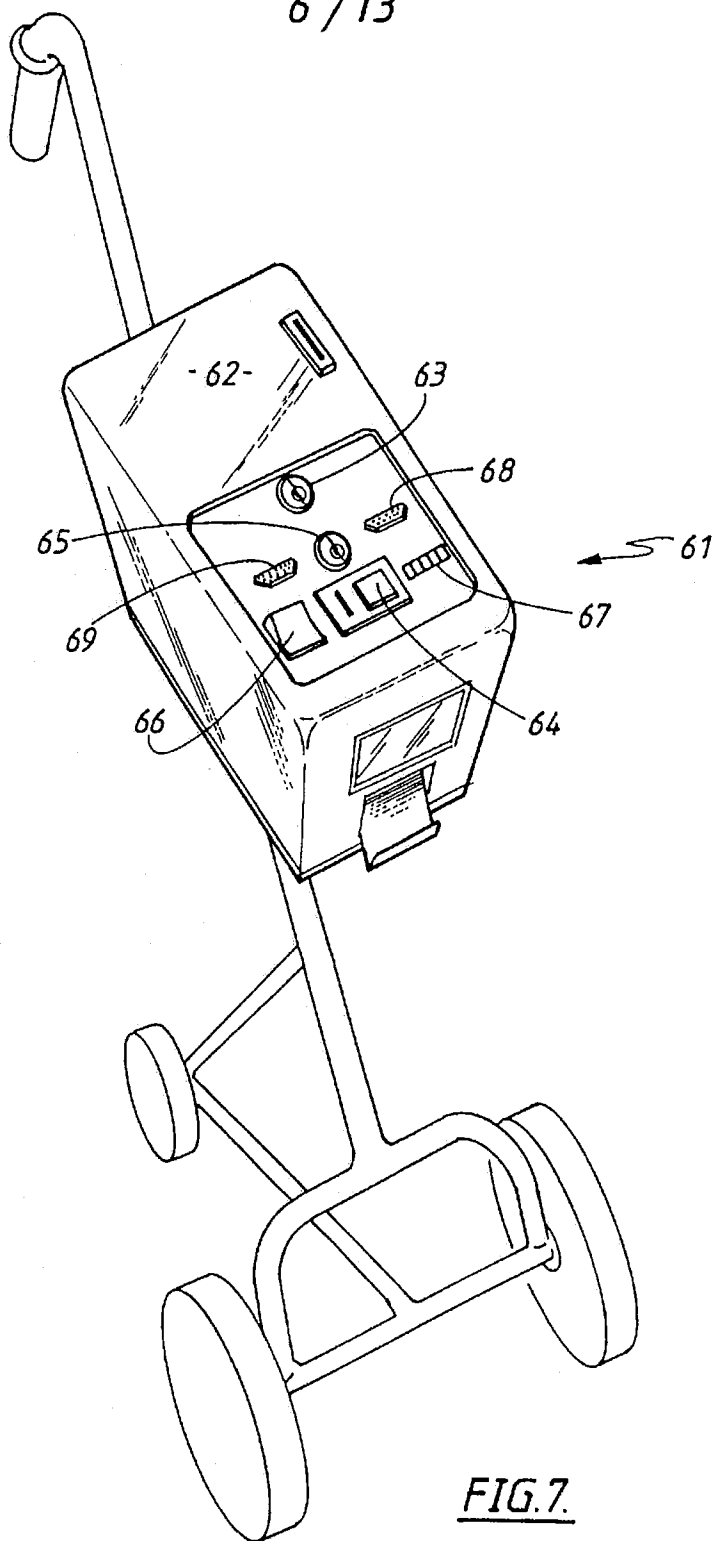
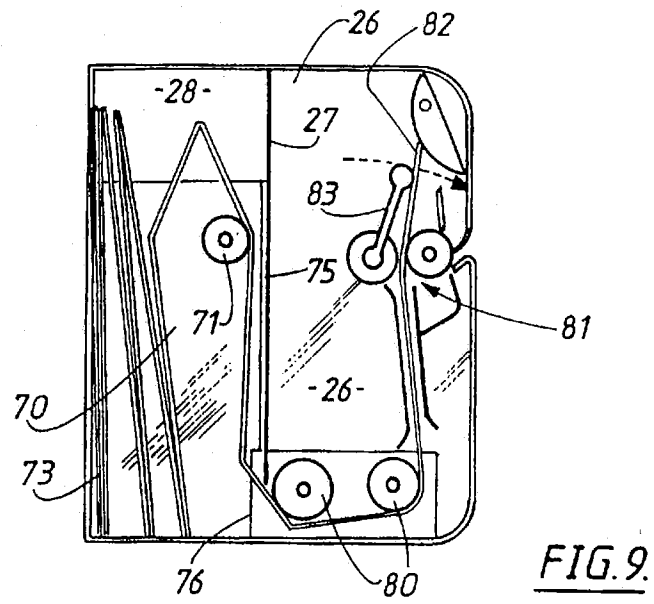
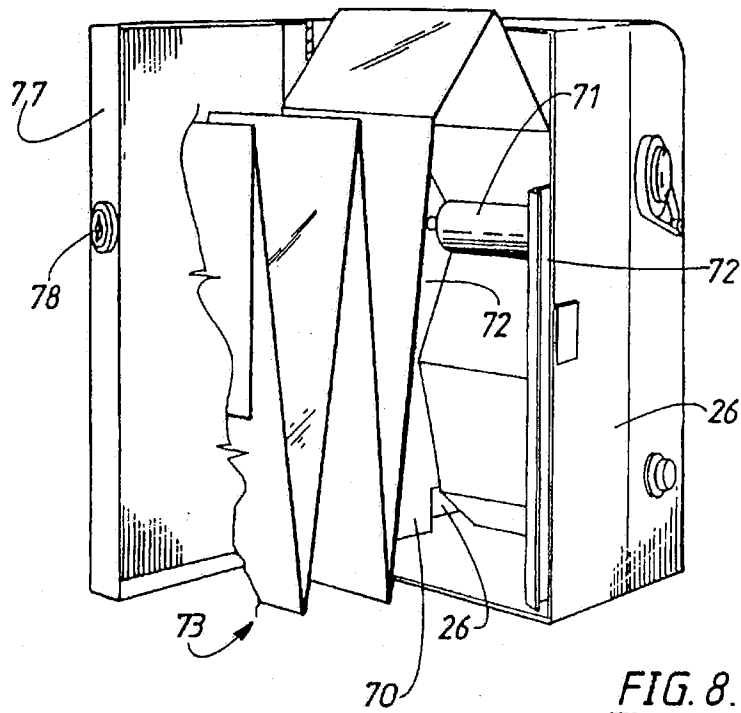


FIG. 7.

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Lottery Products Online Lane Dispenser Ver.2.1

Lane	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Status																										
Issued																										
Request																										
Credits																										
Stock																										
Error																										
Feed																										
Clamp																										
Cul																										
Ticket																										
Speed																										
Code																										

Current Date **03-26-1997**

Current Time **21:52:40**

Maintenance Toggle

Show Error Form

Print Report for lane below

0

Set the lane number to 0 to report on all Lanes

Text 1

Exit

FIG. 10.

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Last Error List x

0

C000

No Errors

Hide Form

1	NA	6	NA	11	NA	16	NA	21	NA
2	NA	7	NA	12	NA	17	NA	22	NA
3	NA	8	NA	13	NA	18	NA	23	
4	NA	9	NA	14	NA	19	NA	24	
5	NA	10	NA	15	NA	20	NA	25	

FIG. 11.

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Lottery Products Online Lane Dispenser Ver.2.1

Lane	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Status																										
Issued			2																							
Request			2																							
Credits			0																							
Stock			387																							
Error			0																							
Feed			OUT																							
Clamp			HM																							
Cul			HM																							
Ticket			IN																							
Speed			123																							
Code			187																							

Maintenance

Comms Power On Off ☒ ☐

Feed Up Feed Down Feed Motor Off

Clamp Out Clamp Stop Clamp Home

Cut Motor on Cut motor off Cut Home

Clear Errors

Reset Init Button

Init Stock 500
Init Speed 125
Init Game Code 125

Receive Ask Tic.1 Ask Issues Clear Issued tickets

Current Date 03-26-1997 Current Time 21:52:40

Maintenance Toggle Show Error Form Print Report for lane below

0

Set the lane number to 0 to report on all Lanes

Text 1

Exit

FIG. 12.

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Lottery Products Online Lane Dispenser Ver.2.1

Lane	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Status	OK																									
Issued	0																									
Request	0																									
Credits	0																									
Stock	473																									
Error	OK																									
Feed	IN																									
Clamp	HM																									
Cut	HM																									
Ticket	Y																									
Speed	125																									
Code	83																									

Current Date 04-04-1997 Current Time 21:52:40

Maintenance Toggle

Show Error Form

Print Report for lane below

0

Set the lane number to 0 to report on all Lanes

Text 1

Exit

Update Mechanism

Please select the action you wish to take below

Current Stock 492

Current Game Code 123

Serial Number 0885493200

Remove

The machine may be removed now

FIG.12a.

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Lottery Products Mobile Ver.1.1

Status	Issue	Request	Credits	Stock	Error	Feed	Clamp	Cui	Ticket	Speed	Code
OK	0	0	0	473	1	IN	HM	HM	Y	125	83

Current Date 04-04-1997 Current Time 10:03:15

Update Mechanism

Please select the action you wish to take below.

Serial Number	8C24C32000
Current Stock	473
Current Game Code	83

Remove

Add

The machine may be removed now

Maintenance Toggle

Print Menu

Text 1

FIG.13.

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FIG. 14.

Lottery Products Mobile Ver.1.1																																																																																																											
Status	Issue	Request	Credits	Stock	Error	Feed	Clamp	Cui	Ticket	Speed	Code																																																																																																
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Print Menu																																																																																																											
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<table border="1"> <tr> <td>Maintenance</td> <td>Comms Power</td> <td>On</td> <td>Off</td> <td></td> <td></td> </tr> <tr> <td>Feed Up</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Feed Down</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Feed Motor Off</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Clamp Out</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Clamp Stop</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Clamp Home</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CutMotor on</td> <td>Init Stock</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Cut motor off</td> <td>500</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Cut Home</td> <td>Motor Speed</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Clear Error</td> <td>125</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ask Tic 1</td> <td>Game Code</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ask Issues</td> <td>123</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Reset InitButton</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Clear Issued tickets</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Time Sync</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>												Maintenance	Comms Power	On	Off			Feed Up						Feed Down						Feed Motor Off						Clamp Out						Clamp Stop						Clamp Home						CutMotor on	Init Stock					Cut motor off	500					Cut Home	Motor Speed					Clear Error	125					Ask Tic 1	Game Code					Ask Issues	123					Reset InitButton						Clear Issued tickets						Time Sync					
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INTERNATIONAL SEARCH REPORT

International Application No
PCT/AU 97/00221

A. CLASSIFICATION OF SUBJECT MATTER		
Int Cl ⁶ : G07C 15/00, G07F 7/02, G07B 3/00, 5/04, G07G 1/12, 1/14		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC G07C 15/00, G07F 7/02, G07B 3/00, 5/04, G07G 1/12, 1/14		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU:IPC as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Derwent: Dispense, vend. control, manage, Japio : govern. regulate. monitor, record, register		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	AU, 45490/93 A (ROTHMANS HOLDINGS LIMITED) 14 February 1994 Whole specification	1-5, 13
X	AU, 45692/79 A (COWELL WS LIMITED) 18 October 1979 page 4, lines 5-21, page 8, lines 7-17, page 20, lines 3-10	1
X	US, 4893705 A (BROWN) 16 January 1990 Abstract, Fig 1	1
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 5 June 1997		Date of mailing of the international search report 13 JUN 1997
Name and mailing address of the ISA/AU AUSTRALIAN INDUSTRIAL PROPERTY ORGANISATION PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No.: (06) 285 3929		Authorized officer M.E. DIXON Telephone No.: (06) 283 2194

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/AU 97/00221

C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	US, 3541309 A (CUTTER) 17 November 1970 Col 2, line 66 - Col3, line 73, Fig 1	1,2,4,13
X	US, 3023851 A (STILLER) 6 March 1962 Col 1, lines 17-34, 47-53, Fig 1	1,2,13
X	GB, 2180527 A (TM GROUP LIMITED) 1 April 1987 Abstract, page 1, lines 105 - page 2, line 111, page 4, lines 32-38	1-3,13
X	GB, 1152831 A (CROSSFIELD ELECTRONICS LIMITED) 21 May 1969 page 1, line 53 - page 2, line 9, page 3, lines 77-87	1,4,5,6
X	WO, 90/07166 A (WELLCOME LABELS CORPORATION) 28 June 1990 page 6, line 16 - page 10, line 30, fig 1	1
X	WO, 88/00741 A (BAR VENDER, INC) 28 January 1988 Abstract, page 4, lines 24-30, page 5, lines 4-24, page 5, line 33 - page 6, line 6	1,3,4
X	DE, 4122708 A (PAEZ MONTERO) 3 December 1992 Col 2 line 52 - col 4, line 29, figs 1, 2	1-6
A	WO, 86/00737 A (SELLMATIC OY (FI/FI)) 30 January 1986 Whole specification	1,10
A	EP, 0586330 A (SINTRA HOLDING AG) 9 March 1994	
A	Patent Abstracts of Japan, P339, page 75, JP, 59-188776 A (TOKYO DENKI KK) 26 October 1984	

INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No.
PCT/AU 97/00221

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
US	4893705	US	5133441		
WO	9007166	US	5038293		
WO	8800741	US	4755957		
WO	8600737	AU	46714/85	CA	1246720
		FI	69718	EP	221072
					END OF ANNEX